

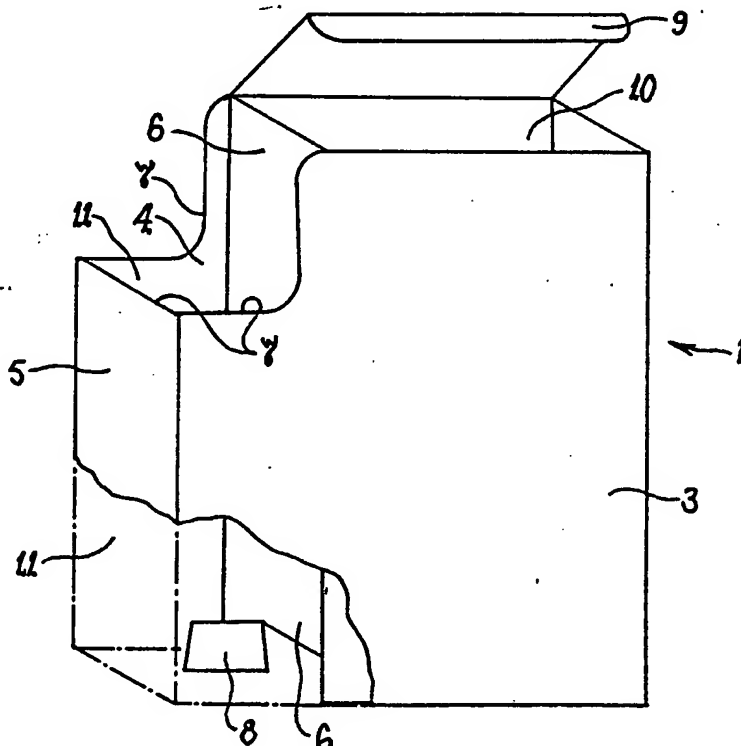


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/AU93/00542 (22) International Filing Date: 21 October 1993 (21.10.93) (30) Priority data: PL 5393 21 October 1992 (21.10.92) AU (71) Applicant (for all designated States except US): F.H. FAULDING & CO. LIMITED [AU/AU]; 160 Greenhill Road, Parkside, S.A. 5063 (AU). (72) Inventors; and (75) Inventors/Applicants (for US only) : ROHRBOUGH, John [US/US]; 11107 East Palomino, Scottsdale, AZ 85259 (US). FRANCK, John [US/US]; 13170 Temple Avenue, City of Industry, CA 91746 (US).		(74) Agent: PHILLIPS ORMONDE & FITZPATRICK; 367 Collins Street, Melbourne, VIC 3000 (AU). (81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>With amended claims.</i>

(54) Title: MULTI-PART PACKAGE**(57) Abstract**

A package is disclosed that enables packaging of associated items in a single pack. Typical of the items to be packaged are pharmaceutical drugs and associated drug delivery apparatus. The package (1) includes a main container or first compartment (10) adapted to contain a first one of the items e.g. drug delivery apparatus and a support or second compartment (11) adapted to releasably hold a subsidiary container to contain the second of the items e.g. vial or similar container. The subsidiary container may take the form of a sleeve or box retained with the second compartment.



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MULTI-PART PACKAGE

This invention relates to packaging in general, and in particular to a multi-part package.

This package is applicable for the packaging of pharmaceutical drugs together with an associated drug delivery apparatus and it will be convenient to hereinafter disclose the invention in relation to that exemplary application. It is to be appreciated, however, that the invention is not limited to that application.

Pharmaceutical drugs such as narcotics are usually stored within containers such as shell glass vials and must be administered using a drug delivery apparatus such as a hypodermic syringe or other injector device. It is therefore generally necessary to have a separate drug delivery apparatus for each drug containing vial.

It would be advantageous to package a drug delivery apparatus together with each vial. However drugs such as narcotics should be stored within a vault or a refrigerator. Because of space limitations within the vault/refrigerator, it is preferable that only the vials be stored therein with the drug delivery apparatus being stored separately.

It is therefore an object of the present invention to overcome, or at least alleviate, one or more of the difficulties or deficiencies of the prior art.

Accordingly, in a first aspect of the present invention, there is provided a multi-part package including a main container;

at least one subsidiary container removably connected to the main container; and

a support means for supporting the subsidiary container in juxtaposition with the main container.

This invention is described herein with reference to the package in a normal use orientation, and terms such as "top" and "bottom" should be construed in the light of this orientation. However, it is to be appreciated that other orientations may be equally possible and that consequential changes in terms such as those above may be required in the light of those other orientations for a

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proper and complete understanding of the invention.

The dimensions of the main container and subsidiary container may be governed by the applications to which they are to be applied.

5 The main container may be dimensioned to accommodate a drug delivery apparatus such as an injector device. The subsidiary container may be dimensioned to accommodate drug vial container such as a shell glass vial.

10 Alternatively the main container is dimensioned to accommodate a vial container including a solvent for the freeze dried or powder drug.

15 In a further alternative embodiment the main container and subsidiary container may be dimensioned to receive containers including two preparations which may be unstable if mixed together. Where applicable, each preparation may be stored at the correct temperature for each (for example one may be refrigerated; the other may be maintained at room temperature).

20 This invention will be hereinafter described with reference to only one subsidiary container although more than one subsidiary container may be provided.

25 In a preferred embodiment of the multi-part package of the present invention, the main container may be in the form of a box. The main container may be manufactured in any suitable manner and from any suitable material. The main container may be manufactured from sheet material such as cardboard or plastic material.

30 The main container may be provided in the form of a container blank. The container blank may be subsequently folded or glued to form the main container. The main container may include front and rear panels joined together at opposing sides thereof by side panels to form a four-sided sleeve. The sleeve may have a rectangular or square cross-section and may have openings at each end thereof.

35 The main container may include closure means provided to cover the opening at the bottom end thereof. The bottom end of the sleeve may for example be provided with a closure or tuck flap with cooperating tabs which

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fold over the opening and co-operate to provide a closure means of the type well known in packaging technology. It is to be appreciated that other closure means are also envisaged. For example, a separate closure cap may be provided to cover the bottom opening of the injector container sleeve.

The main container may include a separation panel joined to and extending between the front and rear panels.

The separation panel may extend parallel to the side panels so as to separate the main container into a first and second compartment. The first compartment, referred to below as the storage compartment, may be adapted to accommodate a drug delivery apparatus. The top end may be closed by closure means such as a tuck, flap to provide the storage space for the drug delivery apparatus. The second compartment, referred to below as the holding compartment, may provide the support means for supporting the subsidiary container. The second compartment may have an open top end.

The subsidiary container of the multi-part package, for accommodating the drug vial container may be of similar manufacture and materials to the main container. The subsidiary container may be provided in the form of a container blank.

The subsidiary container may also be in the form of an elongate box having opposing front and rear panels and adjoining side panels to provide a four-sided sleeve. The sleeve may have a rectangular or square cross-section and the open ends of the sleeve may be closed off by closure means to provide the dosage container storage space therein. Tuck flaps may for example be provided at the top and bottom ends of the sleeve to provide a box in a form commonly used for packaging. Other configurations for the subsidiary container are also envisaged. For example, the container may be in the form of a tube having a circular cross-section.

In use, the subsidiary container may be inserted into the second or holding compartment of the main

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container through its open end to form the multi-part package. The subsidiary container may be dimensioned such that it fits securely within the holding compartment, there being frictional engagement between the walls of the subsidiary container and the holding compartment.

To facilitate removal and reinsertion of the subsidiary container, sections of the panels at the top end of the holding compartment of the main container may be removed to allow a portion of the sides of the subsidiary container to remain exposed when accommodated within the holding compartment. This exposed portion may be gripped to facilitate removal of the subsidiary container therefrom. Preferably, a portion of the front and rear panels and adjoining side panel adjacent the open end of the holding compartment may be removed.

The top of the subsidiary container, when fully accommodated within the holding compartment, may be level with the top of the main container. This makes it easier to grip the vial container as well as providing an aesthetically pleasing appearance to the assembled package.

If the subsidiary container is shorter in length than the main container, the second or holding compartment of the main container may further include

an abutment at the bottom end thereof.

The abutment may be dimensioned to support the subsidiary container at the desired level within the multi-part package. This abutment may for example be provided by a tongue extending from the bottom end of the separation panel of the main container into the second or holding compartment. The subsidiary container may sit on said tongue when supported within the holding compartment.

In a preferred form, the main and subsidiary containers of the multi-part package may come in different sizes so that only matching container pairs may fit together properly. This may assist in ensuring that the correct drug is rematched with the correct drug delivery apparatus. The respective containers may also be colour matched for identification.

It will be understood that as well as allowing the

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drug vial container to be separately stored, the subsidiary containers also provide additional protection from breakage during shipment. This is important for example where shell glass vials are used as the drug vial container. Furthermore, because the vial itself may not be tamper evident, the subsidiary container may be sealed to afford tamper evident assurance.

The multi-part package of the present invention accordingly provides separate subsidiary and main containers for respectively containing a drug vial container and its associated drug delivery apparatus. The separate containment of the drug vial container and drug delivery apparatus afford additional protection from breakage during transport thereof. Furthermore, the subsidiary container containing the drug may be separated from the main container thereby allowing the drug to be stored separately from the drug delivery apparatus. This is important when the drugs must be stored in a vault or refrigerator for security, safety or stability purposes and there are space limitations therein. The drug container may be removed and stored within the vault or refrigerator with the drug delivery apparatus being stored separately. The drug container may be subsequently reconnected to the main container.

The present invention will now be more fully described with reference to the accompanying drawings. It should be understood, however, that the description following is illustrative only and should not be taken as a restriction on the generality of the invention described above.

In the drawings:

FIGURE 1 is a perspective view of an example embodiment of the main or injector container of the multi-part package of the present invention;

In more detail, Figure 1 illustrates an embodiment of the multi-part package where the main or injector container 1 is in the form of a box having a front panel 3 and rear panel 4 and adjoining side panels 5. A separation panel 6 separates the main container 1 into a first or

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storage compartment 10 for accommodating a drug delivery apparatus (not shown) and a second or holding compartment 11. A tuck flap 9 is used to close the top opening of the storage compartment 10. A similar tuck flap (not shown) is provided at the bottom to close off the bottom openings of both the storage and holding compartments 10,11.

The subsidiary or drug vial container (not shown) is also in the form of a box which may be accommodated within the holding compartment 11. A cut-away section 7 is provided in the front and rear panels 3, 4 and the side wall 5 at the top end of the holding compartment 11. A tongue 8 extends from the separation panel 6 at the bottom end of the holding compartment 11. The drug vial container sits on the tongue 8 so that its top is level with the top of the injector container 1 with a portion of the drug vial container remaining exposed to facilitate removal therefrom.

Finally, it is to be understood that various modifications and/or alterations may be made to the package without departing from the ambit of the present invention as described herein.

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Claims

1. A multi-part package including
a main container;
at least one subsidiary container removably
5 connected to the main container; and
a support means for supporting the subsidiary
container in juxtaposition with the main container.
2. A multi-part package according to claim 1, wherein
the main container is dimensioned to accommodate a
10 drug delivery apparatus; and
the subsidiary container is dimensioned to
accommodate a drug vial container.
3. A multi-part package according to claim 1, wherein
the subsidiary container is dimensioned to accommodate a
15 drug container including a freeze dried or powder drug;
and the main container is dimensioned to accommodate a
vial container including a solvent for the freeze dried or
powder drug.
4. A multi-part package according to claim 1, wherein
20 the main container is in the form of a box and includes
front and rear panels joined together at opposing
sides thereof by side panels to form a four-sided sleeve;
closure means adapted to cover the opening at the
bottom end thereof; and
25 a separation panel joined to and extending between
the front and rear panels to separate the main container
into a first and second compartment.
5. A multi-part package according to claim 4, wherein
the subsidiary container is in the form of an elongate box
30 having opposite front and rear panels and adjoining side
panels to provide a four-sided sleeve and dimensioned such
that there is frictional engagement between the walls of
the subsidiary container and the second compartment.
6. A multi-part package according to claim 5, wherein
35 the subsidiary container is shorter in length than the
main container, the second compartment of the main
container further includes an abutment at the bottom end
thereof dimensioned to support the subsidiary container at
a desired height within the multi-part package.

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7. A multi-part package according to claim 6, wherein the abutment includes a tongue extending from the bottom end of the separation panel of the main container into the second compartment.

5 8. A multi-part package according to claim 5, wherein sections of the panels at the top end of the second compartment of the main container are removed to allow a portion of the sides of the subsidiary container to remain exposed when accommodated within the holding compartment.

10 9. A multi-part package according to claim 1, substantially as hereinbefore described with reference to the accompanying drawing.

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AMENDED CLAIMS

[received by the International Bureau on 18 February 1994 (18.02.94);
original claims 1-8 replaced by amended claims 1-8
other original claims unchanged (2 pages)]

1. A multi-part package including
a main container in the form of a box and includes front and rear panels joined
together at opposing sides thereof by side panels to form a four-sided sleeve;
first closure means adapted to cover the opening at the bottom end thereof;
5 a separation panel joined to and extending between the front and rear panels to
separate the main container into the first and second compartments; and
second closure means adapted to cover the opening at the top of the first
compartment;
wherein the second compartment provides a support means for supporting at
10 least one subsidiary container in juxtaposition with the main container.
2. A multi-part package according to claim 1, wherein the subsidiary container is
removably connectable to the main container when the first and second closure means
are covering their respective openings.
- 15 3. A multi-part package according to claim 1, wherein the subsidiary container is in
the form of an elongate box having opposite front and rear panels and adjoining side
panels to provide a four-sided sleeve and dimensioned such that there is frictional
engagement between the walls of the subsidiary container and the second
20 compartment.
4. A multi-part package according to claim 3, wherein the subsidiary container is
shorter in length than the main container, the second compartment of the main
container further includes an abutment at the bottom end thereof dimensioned to
25 support the subsidiary container at a desired height within the multi-part package.
5. A multi-part package according to claim 4 wherein the abutment includes a
tongue extending from the bottom end of the separation panel of the main container
into the second compartment.
- 30 6. A multi-part package according to claim 4, wherein sections of the panels at the
top end of the second compartment of the main container are removed to allow a

portion of the sides of the subsidiary container to remain exposed when accommodated within the holding compartment.

7. A multi-part package according to any one of claims 1-6, wherein
5 the main container is dimensioned to accommodate a drug delivery apparatus;
and
the subsidiary container is dimensioned to accommodate a drug vial container.
8. A multi-part package according to any one of claims 1-6, wherein the subsidiary
10 container is dimensioned to accommodate a drug container including a freeze dried or
powder drug; and the main container is dimensioned to accommodate a vial container
including a solvent for the freeze dried or powder drug.
9. A multi-part package according to claim 1, substantially as hereinbefore
15 described with reference to the accompanying drawing.

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁵ B65D 5/48 // A61J 1/00 According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC: B65D 5/48 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: B65D; A61J; A45C Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.		
X	AU,A,30530/30 (DORMAN) 15 October 1931 (15.10.31) Whole document	1,2		
X	AU,A,16212/34 (MURRAY) 14 February 1934 (14.02.34) The arrangement of Figs. 1 to 4 including a box in the second compartment to contain the articles and defining a four sided sleeve	1,2,3,4,5,6,7		
X	AU,B,3917/54 (228161) 8 December 1955 (08.12.55) Whole document wherein the match box defines a four sided sleeve	1,2,3,4,5,6		
<div style="display: flex; justify-content: space-between;"> <div style="text-align: left;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. </div> <div style="text-align: right;"> <input checked="" type="checkbox"/> See patent family annex. </div> </div>				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> * Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; vertical-align: top;"> "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family </td> </tr> </table>			* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search 14 December 1993 (14.12.93)		Date of mailing of the international search report 22 DEC 1993 (22.12.93)		
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. (06) 2853929		Authorized officer <div style="text-align: center;">  R. KIRBY Telephone No. (06) 2832369 </div>		

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
X	AU,B,46314/59 (229822) 27 August 1959 (27.08.59) Whole document	1,2,3,4
X	AU,B,55918/59 (244539) 23 June 1960 (23.06.60) Whole document	1,2,3
X	AU,A,10227/76 (FOSCOLOS) 21 July 1977 (21.07.77) Whole document wherein the match box defines a four sided sleeve	1,2,3,4,5
X	AU,A,73155/81 (FURTHER) 4 February 1982 (04.02.82) Whole document	1,2
X	AU,A,64938/86 (ZOLAND) 12 May 1988 (12.05.88) Whole document	1,2,3
X	AU,A,68537/90 (AMERICAN CYANAMID COMPANY) 11 July 1991 (11.07.91) Whole document	1
X	AU,A,83406/91 (ELI LILLY & CO.) 12 May 1992 (12.05.92) Whole document	1,2,3
X	US,A,2015278 (MEYER) 24 September 1935 (24.09.35) Whole document wherein the goods carried in the compartments are contained in containers	1,2,3,4
X	US,A,2060513 (MARX) 10 November 1936 (10.11.36) Whole document	1,2,4
X	US,A,3111253 (HENNESSEY) 19 November 1963 (19.11.63) Whole document	1,2,4,8
Y	Cut down sides	8
X	US,A,3563449 (FORBES) 16 February 1971 (16.02.71) Whole document	1,2,3,4,5,6,7
Y		8
X	US,A,3567105 (FARLIN) 2 March 1971 (02.03.71) Whole document	1,2,4
X	US,A,3627117 (GLESNER) 14 December 1971 (14.12.71) Whole document	1,2,3
X	US,A,3866747 (SCHOLZ) 18 February 1975 (18.02.75) Whole document wherein the article held in the pocket 22 is a subsidiary container in the form of sleeve e.g. box.	1,2,3,4,8
X	US,A,4170295 (KUEHLI et al) 9 October 1979 (09.10.79) Whole document	1,2,3
X	US,A,4407442 (WATSON et al) 4 October 1983 (04.10.83) Whole document wherein the goods contained in the compartments are contained in containers	1,2,3,4

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
X	GB,A,2199727 (McDERMOTT) 20 July 1988 (20.07.88) Whole document	1,2,4,8
X	WO 91/17099 (ON-GARD SYSTEMS INC) 14 November 1991 (14.11.91) Whole document	1,2,3
X	FR 2050009 (BOWATER EMBALLAGE REIMS) 26 March 1971 (26.03.71) Whole document	1,2,3,4
X	FR 2184067 (BOXFOLDIA LTD) 21 December 1973 (21.12.73) Whole document	1,2,3,4

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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